

9. Maciej

Program Name: maciej.java

Input File: maciej.dat

Maciej (*pronounced "mah chay"*) and his programming partner Mateusz (*pronounced "mah teh oosh"*) are designing a website. Both Maciej and Mateusz want to use their favorite color as the main color on the website.

One way to represent colors on a computer is in RGB space. A color is comprised of some amount of red, green, and blue. The amount of each color must be a non-negative integer at most 255. For example (0, 0, 255) is pure blue, (255, 255, 255) is white, and (191, 87, 0) gives a strange orange-brown color.

When displayed, colors usually begin with an octothorpe (this symbol: #), followed by the amounts of each color in hexadecimal, using uppercase letters. (0, 0, 255) becomes #0000FF, and (191, 87, 0) becomes #BF5700.

Maciej and Mateusz decided to compromise in the following manner. They each write down their favorite color. Then, for each color channel, they find a new color that minimizes the maximum difference to each of the original colors and use that. If there are multiple, they choose the smaller one.

For example, if the original colors were #BF5700 and #430030, then the red channel would be 129, the green channel would be 43, and the blue channel would be 24. This would be shown as #812B18.

Input: The first line of input has an integer T, the number of test cases. Each test case has two space-separated colors. All colors will be formatted as explained in the statement using uppercase letters.

Output: For each test case, output the color that the two compromise on, in hexadecimal format, using uppercase letters. Format each case as in the samples.

Sample Input:

```
2
#000000 #FFFFFF
#BF5700 #430030
```

Sample Output:

```
Case #1: #7F7F7F
Case #2: #812B18
```